Commonwealth of Massachusetts Initial Consultation Meeting

March 12, 2015
Waltham, MA

Agenda

- Massachusetts FirstNet **Stakeholders**
- Massachusetts FirstNet **Governance**
- Massachusetts SLIGP **Outreach** Activities
- Massachusetts Use Case: **The Boston Marathon**
  - Part 1: Preparing for the Annual Marathon Event
  - Part 2: Responding to the Mass Casualty Incident
  - Part 3: Conducting the Investigation
  - Part 4: Managing the Multijurisdictional Manhunt
- Massachusetts **Overview** and **User and Coverage Needs**

MASSACHUSETTS FIRSTNET STAKEHOLDERS

Massachusetts Stakeholders

★ *In attendance*

PSBO
Public Safety Broadband Office

State Agencies and Officials

Administration & Finance
- Exec Office of Administration and Finance
- ★ Office of the Commonwealth Chief Information Officer

Consumer Affairs & Business Regulation
- Office of Consumer Affairs and Business Regulation
- ★ Department of Telecommunications and Cable

Energy & Environmental Affairs
- Executive Office of Energy and Environmental Affairs
- Department of Conservation and Recreation
- Department of Energy Resources
- Department of Environmental Protection
- Department of Public Utilities
- EEA Office of Law Enforcement (Massachusetts Environmental Police)

Executive Office of the Trial Court
- Executive Office of Trial Court
- Office of the Commissioner of Probation

General Court of the Commonwealth

Health & Human Services
- Executive Office of Health and Human Services
- ★ Department of Public Health

Housing & Economic Development
- Executive Office of Housing and Economic Development
- Massachusetts Office of Business Development
- ★ Massachusetts Technology Collaborative
- ★ Massachusetts Broadband Institute

Office of the Governor

Public Safety & Security
- ★ Executive Office of Public Safety and Security
- Department of Correction
- ★ Department of Criminal Justice Information Services
- ★ Department of Fire Services
- Department of Public Safety
- ★ Massachusetts Emergency Management Agency
- Massachusetts National Guard
- ★ Massachusetts State Police
- ★ State 911 Department

Transportation & Public Works
- ★ Massachusetts Bay Transportation Authority
- ★ Massachusetts Department of Transportation
- Massachusetts Port Authority

Massachusetts Stakeholders

⭐ *In attendance*

PSBO
Public Safety Broadband Office

Statewide Organizations

⭐ Fire Chiefs Association of Massachusetts
⭐ Massachusetts Communications Supervisors Association
Massachusetts Municipal Association

Massachusetts Ambulance Association
Massachusetts Hospital Association
Massachusetts Sheriff's Association

⭐ Massachusetts Chiefs of Police Association
⭐ Massachusetts Major City Chiefs
⭐ Massachusetts State 911 Commission

Regional Organizations

⭐ Greater Boston Police Council
Regional Fire Services
⭐ Regional Law Enforcement Councils

Regional Emergency Medical Service Councils
⭐ Regional Homeland Security Advisory Councils
Regional Planning Agencies

County and Municipal Organizations

Municipal Emergency Management
⭐ Municipal Law Enforcement
Municipal Public Works

⭐ Municipal Fire Services
Municipal Leaders
⭐ Sheriff's Offices

Private and Other Organizations

Boston Area Police Emergency Radio Network
University and Other Special Police
Wireless Commercial Carriers

OpenCape
Utilities

Federally Recognized Tribes

Mashpee Wampanoag Tribe of Massachusetts
⭐ Wampanoag Tribe of Gay Head (Aquinnah) of Massachusetts

MASSACHUSETTS FIRSTNET GOVERNANCE

The Office of the Governor of Massachusetts

Roles and Responsibilities

- **Designate** the Massachusetts **Single Point of Contact**

- Decide whether to **opt in or opt out** of the Massachusetts RAN Design

- **Coordinate legislative activities** with the Massachusetts General Court

- **Coordinate regulatory and oversight activities** with respective agencies and regulatory bodies

Massachusetts FirstNet Governance
The Role of the MFAB

Massachusetts FirstNet Advisory Board

Roles and Responsibilities

- Provide a **cross-discipline forum** for discussing issues related to the implementation of the NPSBN in MA

- **Represent stakeholders' interests** during RAN design

- Identify potential regulatory, ordinance, or statutory obstacles and **coordinate needed changes**

- **Serve as a contact point** for represented organizations during the data collection phase

- Provide representatives to **serve on working groups**, as requested by the SPOC

Massachusetts FirstNet Governance
MFAB Membership

PSBO
Public Safety Broadband Office

Public Safety Technology (Chair)
Curtis Wood, Undersecretary for Forensic Science and Technology

Transportation
Randy Clarke, MassDOT Senior Director of Security and Emergency Management

Telecommunications and Cable
Karen Charles Peterson, Commissioner of Dept of Telecommunications and Cable

State Police
David Otte, Major, Massachusetts State Police

State Fire Services
Peter Ostroskey, Deputy State Fire Marshal

Public Health and EMS
Michael Kass, Director of OEMS
Bud McDonough, OEMS Inspector

Massachusetts Broadband Institute
Eric Nakajima, MBI Director

Local Law Enforcement
Lincoln Miller, Chief of Marion Police Dept

Local Law Enforcement
John LeLacheur, Chief of Beverly Police Dept

Massachusetts FirstNet Advisory Board (MFAB)

Administration and Finance
Unassigned

Commonwealth CIO
Bill Oates, Commonwealth CIO

Criminal Justice Information Systems
James Slater, Acting Commissioner of DCJIS

Homeland Security/MEMA
Kurt Schwartz, Undersecretary for Homeland Security and Emergency Management

Local Fire Services
John Henderson, Superintendent of Boston Fire

Local Fire Services
Gary McCarraher, Chief of Franklin Fire Dept

Local Fire Services
Joseph Cuneo, Chief of New Salem Fire Dept

Local Law Enforcement
John Daley, Deputy Superintendent for Boston Police Dept

Massachusetts FirstNet Governance
The Role of the PSBO
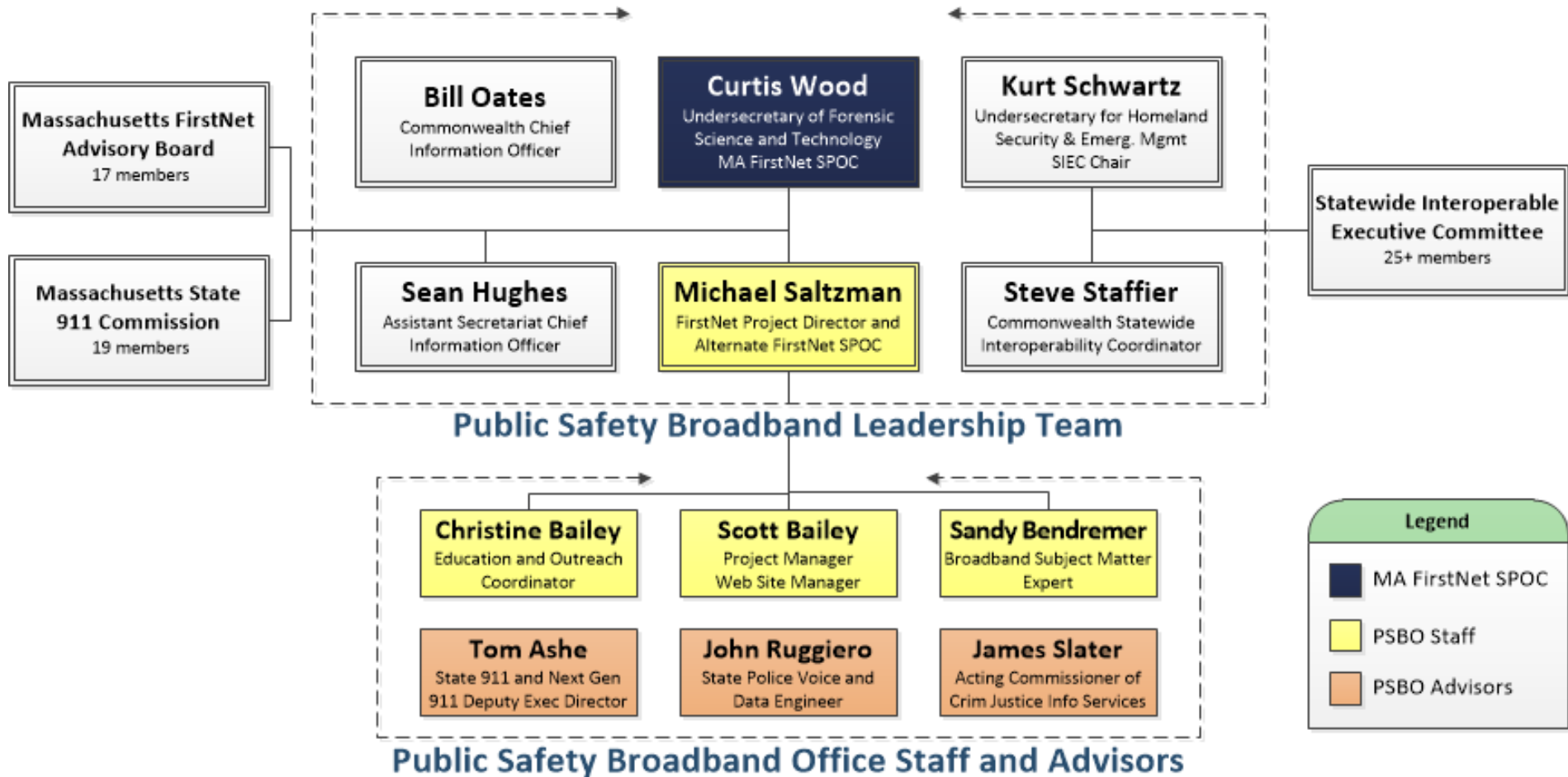
Public Safety Broadband Office

Roles and Responsibilities

- Manage **day-to-day decisions** concerning Massachusetts participation in NPSBN

- Manage **SLIGP obligations**

- **Coordinate with FirstNet** on development of the Massachusetts RAN Design

- **Solicit feedback and input** from advisory bodies

- **Provide recommendation** to the Office of the Governor concerning opt in or opt out

Massachusetts FirstNet Governance
PSBO Organization

PSBO Public Safety Broadband Office

Governor Patrick designated **EOPSS Undersecretary Curtis Wood** as the Commonwealth's **Single Point of Contact (SPOC)** to FirstNet.

Public Safety Broadband Leadership Team

- Massachusetts FirstNet Advisory Board — 17 members
- Massachusetts State 911 Commission — 19 members
- **Bill Oates** — Commonwealth Chief Information Officer
- **Curtis Wood** — Undersecretary of Forensic Science and Technology, MA FirstNet SPOC
- **Kurt Schwartz** — Undersecretary for Homeland Security & Emerg. Mgmt, SIEC Chair
- Statewide Interoperable Executive Committee — 25+ members
- **Sean Hughes** — Assistant Secretariat Chief Information Officer
- **Michael Saltzman** — FirstNet Project Director and Alternate FirstNet SPOC
- **Steve Staffier** — Commonwealth Statewide Interoperability Coordinator

Public Safety Broadband Office Staff and Advisors

- **Christine Bailey** — Education and Outreach Coordinator
- **Scott Bailey** — Project Manager, Web Site Manager
- **Sandy Bendremer** — Broadband Subject Matter Expert
- **Tom Ashe** — State 911 and Next Gen 911 Deputy Exec Director
- **John Ruggiero** — State Police Voice and Data Engineer
- **James Slater** — Acting Commissioner of Crim Justice Info Services

Legend
- MA FirstNet SPOC
- PSBO Staff
- PSBO Advisors

MASSACHUSETTS SLIGP OUTREACH ACTIVITIES

MA Outreach Activities

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Public Safety Broadband Office

The **Massachusetts Outreach Plan** details the stakeholders in Massachusetts and the tools to be used during the education and outreach phase of the SLIGP grant.

- Mass.gov/PSBO **web site** (~650 hits/month)
- 5 **Regional Information Sessions**
- Informational **Mailings**
  - 1250 to Fire, Police, EM, and others
  - 81 to State agency heads
  - 124 to EMS directors
- 841 User Agency **Surveys**
  - 352 Police Departments
  - 369 Fire Departments
  - 120 EMS provider (public and private)
- Participation at **Stakeholder Meetings**
  - Greater Boston Police Council
  - Statewide Interoperability Executive Committee
  - State 911 Commission
  - Barnstable County 700 Mhz Subcommittee
  - OpenCape

  - Massachusetts Broadband Institute (MBI)
  - UASI PSNet Executive Committee
  - 2014 Statewide Emergency Management Conference
  - 2014 National Law Enforcement Telecommunications System (Nlets) Annual Business Meeting
  - Massachusetts Major City Chiefs of Police
  - Southeast MA Regional Homeland Security Advisory Council (SRAC)
  - Western Region Homeland Security Advisory Council (WRHSAC)
  - Central Region Homeland Security Advisory Council (CRHSAC)
  - Massachusetts Chiefs of Police Association
  - Commonwealth Chief Information Officers Meeting
  - Verizon Wireless Public Safety Day
- **Additional surveys and stakeholder meetings planned** for spring and summer

PSBO User Survey
Current and Potential Wireless Use

The PSBO **coordinated with FirstNet** this winter to help assure Massachusetts end user survey data would be **in line with anticipated FirstNet data needs.**

- Survey Design
  - Leverages known **data from OEC** and local sources (**MassChiefs, FCAM, OEMS**)
  - Leverages questions and survey design from **CASM Mobile Data Survey Tool**
  - Designed for agencies to confirm or update (**not asking for the same info over again**)

- Survey Content
  - Leadership, contacts, and locations
  - Financial structure
  - Staff counts (fulltime, part-time, volunteer, sworn)
  - Fleet size
  - Wireless coverage provider and ratings
  - Major events in the area
  - Wireless data device counts
  - Use of personal devices
  - Current wireless data needs
  - Questions, comments, or concerns for FirstNet

Location of Initial Respondents to the PSBO Survey
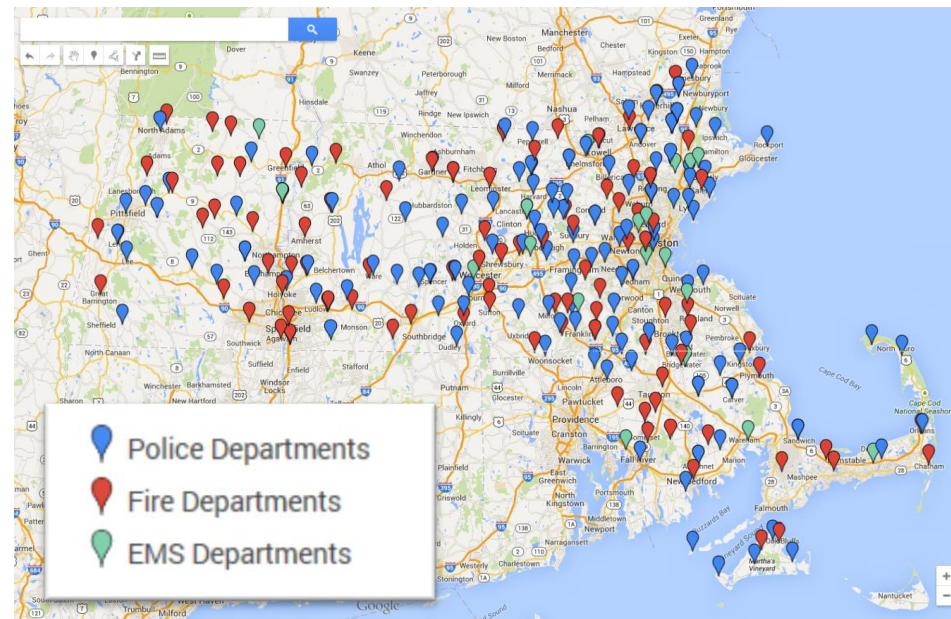
NOTE: Surveys to EMS were sent to non-profit and private providers. Many EMS in Massachusetts are run by fire departments.

PSBO User Survey
Rating Current Wireless Coverage from 1-10

On a **scale of 1 to 10**, how would you **rate your current wireless data coverage**? 1 is "worst - little or no coverage throughout operational area" and 10 is "best - full coverage throughout operational area".

Legend:
- 0.0 to 4.9
- 6.0 to 6.9
- 5.0 to 5.9
- 7.0 to 10.0

PSBO User Survey
Current and Potential Wireless Use
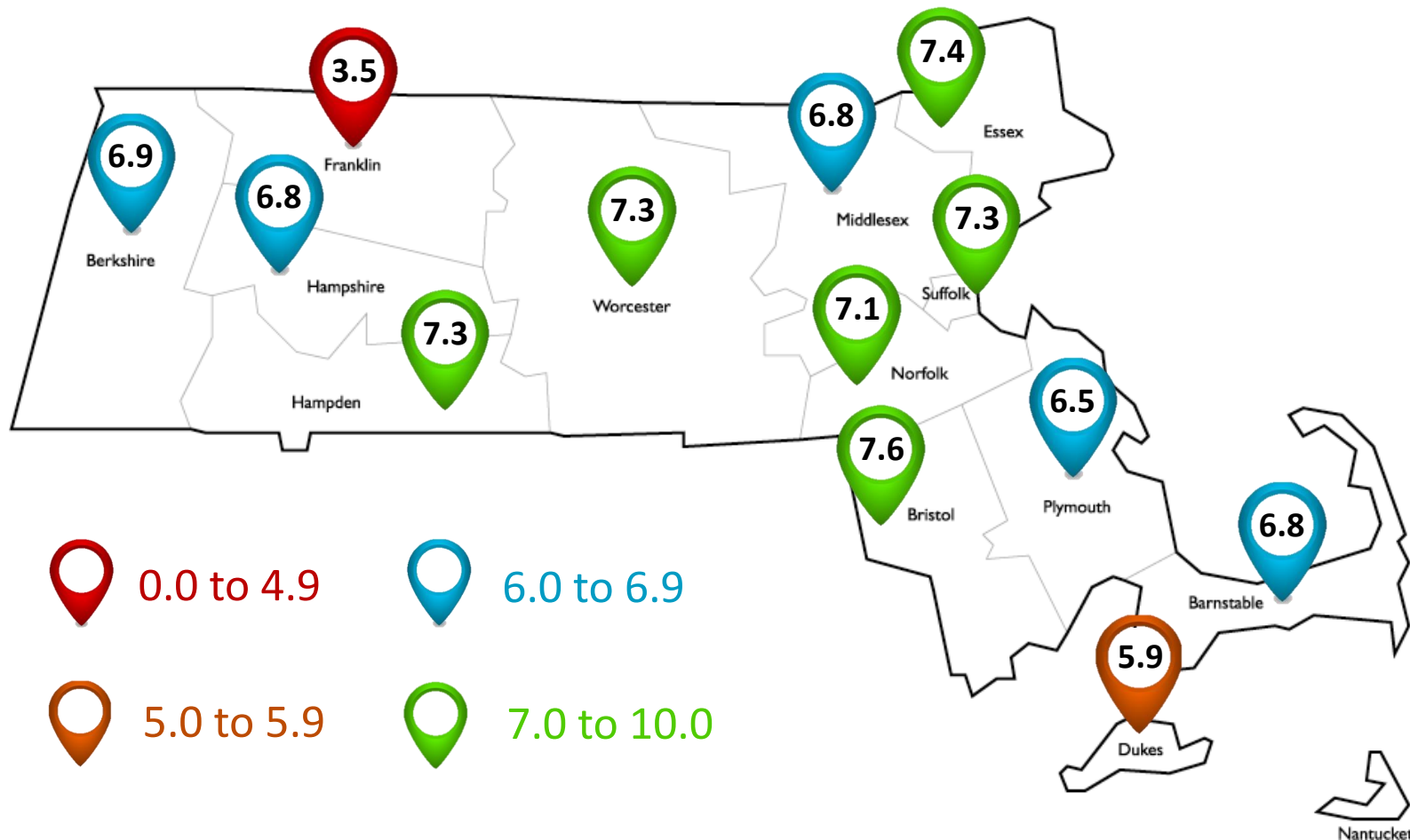
Currently Using or Want to Use

1. Text messaging, paging, one way	95%
10. Internet browser access	93%
5. Computer Aided Dispatch (CAD)	93%
4. Records Management Systems	92%
6. Field based reporting	90%
9. Geospatial (GIS) applications	86%
7. Small file (under 1MB) transfers	81%
8. Large file (over 1MB) transfers	80%
11. Intranet access/VPN to home network	80%
14. Transmission of high quality video	78%
13. Transmission of low quality video	69%
3. Database inquiries (NCIC, CJIS, hot files)	65%
2. Automatic vehicle location	61%
15. Telemetry (continuous monitoring)	56%
12. Tactical 'chat' rooms	51%

Not Using, But Would Like To Use

14. Transmission of high quality video	65%
9. Geospatial (GIS) applications	59%
8. Large file (over 1MB) transfers	53%
13. Transmission of low quality video	50%
2. Automatic vehicle location	45%
15. Telemetry (continuous monitoring)	44%
6. Field based reporting	44%
12. Tactical 'chat' rooms	40%
11. Intranet access/VPN to home network	39%
7. Small file (under 1MB) transfers	37%
5. Computer Aided Dispatch (CAD)	33%
4. Records Management Systems	33%
10. Internet browser access	25%
3. Database inquiries (NCIC, CJIS, hot files)	17%
1. Text messaging, paging, one way	10%

PSBO Survey Results
Questions, Requests, and Concerns

Massachusetts FirstNet Use Cases
The Boston Marathon Panel Discussion

Preparing for the Annual Boston Marathon

Responding to the Mass Casualty Incident

Conducting the Investigation

Managing the Multijurisdictional Manhunt

Panelists

Peter Clifford
Superintendent, Fire Alarm Division,
Boston Fire Department

John Daley
Deputy Superintendent and Commander of the Technology Services Division,
Boston Police Department

Edward Deveau
Chief of Police,
Watertown Police Department

James Hooley
Chief of Department,
Boston EMS

Kurt Schwartz
Undersecretary for Homeland Security and Emer Mgmt,
Executive Office of Public Safety and Security

Director,
Massachusetts Emergency Management Agency

Curt Wood
Undersecretary of Forensic Science and Technology,
Executive Office of Public Safety and Security

MASSACHUSETTS OVERVIEW AND USER AND COVERAGE NEEDS

Massachusetts Overview
Unique Geographic Considerations

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Public Safety Broadband Office

Nearly half **forestland** with **143 state forests and parks** (public and private forests and parks nearly 10% of land mass)

3rd most **densely populated** state

10th largest metropolitan statistical area (MSA) in the US

Rugged terrain in Western MA

Large, **busy harbors**, bays, ferry lines, and coastal areas

One of the largest man-made **public water supplies** (Quabbin Reservoir, 18 miles long, 181 miles of shoreline)

Tribal lands on Martha's Vineyard

2 **island** counties

All state land in Massachusetts is incorporated within **351 cities and towns**. The federal government administers **3 active air force bases**, **11 national wildlife refuges**, and the **Cape Cod National Seashore**.

Massachusetts Overview
Full Range of Hazards

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Public Safety Broadband Office

Massachusetts experiences a **variety of environmental hazards** that will require **hardening of the Massachusetts RAN**.

Damaging **ice storms** (2008 storm resulted in 1M without power and mobilization of MA National Guard)

Frequent **flooding** caused by heavy rains and snow melt

Seismic activity, including 3.6 magnitude earthquake near the coast in 2003 and a 2.1 in Buzzard's Bay in 2011

FEMA **special wind region** in Western MA

Tornado outbreaks, including June 2011 that resulted in 3 fatalities, 300+ injuries, and 500 homeless

History of **forest fires** across the 3.5 million acres of state, public and private wooded land

Susceptible to **Nor'easters and hurricanes** (coastal flooding and wind damage)
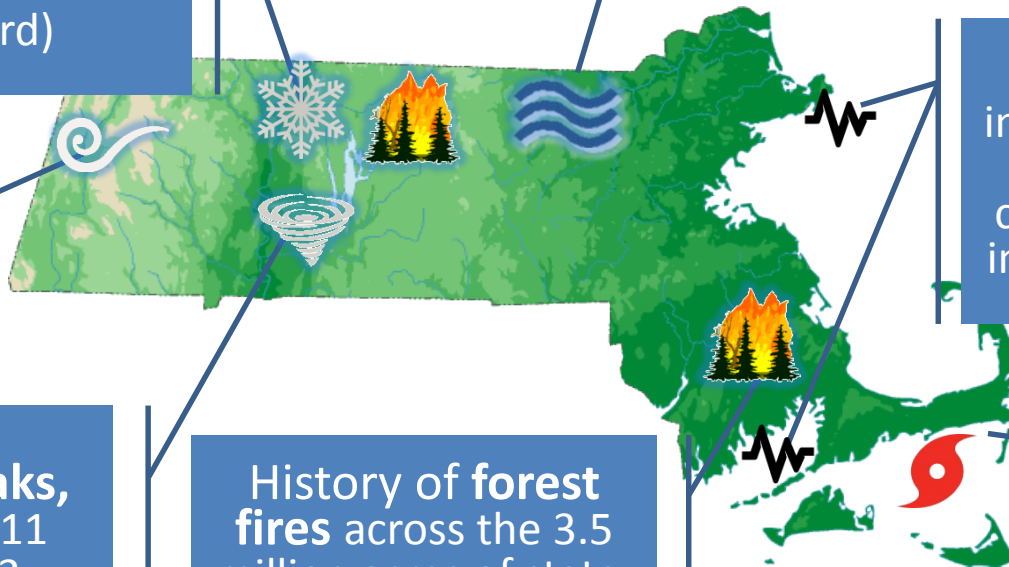
Massachusetts Overview
Local Government and Home Rule

Cities and towns have certain autonomy under the **Home Rule law**. Local government will be responsible for **decisions to purchase FirstNet services**. There are numerous **local ordinances that may affect RAN implementation**.

- **50 cities and 301 towns** using four types of local government
  - **Elected Mayor and Council** *(most cities, including Boston, Lawrence, Springfield, Fall River, and Taunton)*
  - **Council and Appointed Manager** *(some cities, including Worcester, Cambridge, and Lowell)*
  - **Open Town Meeting** with Elected Selectmen and Appointed Town Manager *(263 towns, must have population less than 6,000)*
  - **Representative Town Meeting** with Elected Selectmen and Appointed Town Mngr *(50 towns)*

- **14 counties**
  - Most county governments **abolished in 1990s**
  - Primary remaining elements of county government are **Sheriff's Offices**
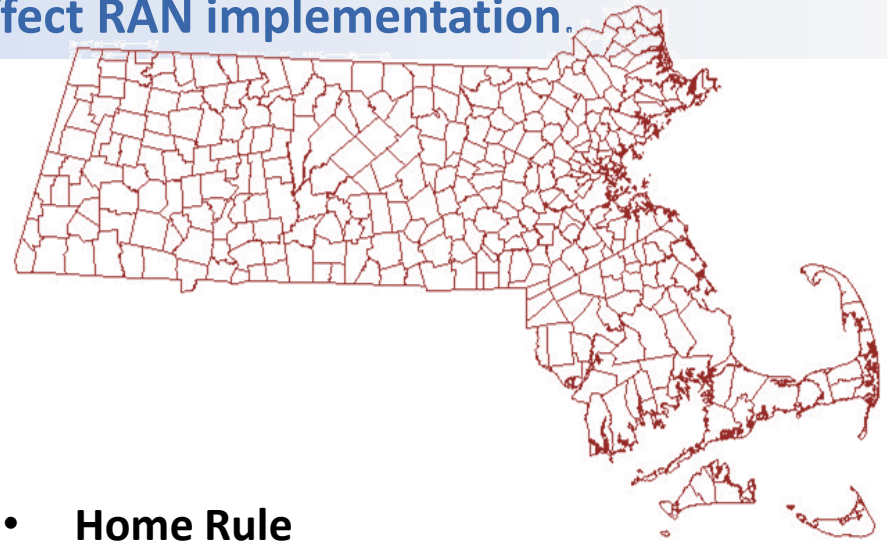
- **Home Rule**
  - Mass Constitution **amended in 1966**
  - Cities and towns **responsible for** most aspects of **fire** and **law enforcement**
  - Cities have expanded **rights to issue ordinances** and manage their municipality
  - **Limitations exists** on the abilities of cities and towns **to tax**

Massachusetts Overview
Potential FirstNet Users

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Public Safety Broadband Office

Massachusetts State Police **provides local law enforcement** in several communities in Western MA

5 Homeland Security Planning Regions

1 Urban Area Security Initiative (UASI) Region

West — Central — North East — Metro Boston — South East

As many as **166 first responder agencies** use the BAPERN system operating on **T-Band** in Eastern MA
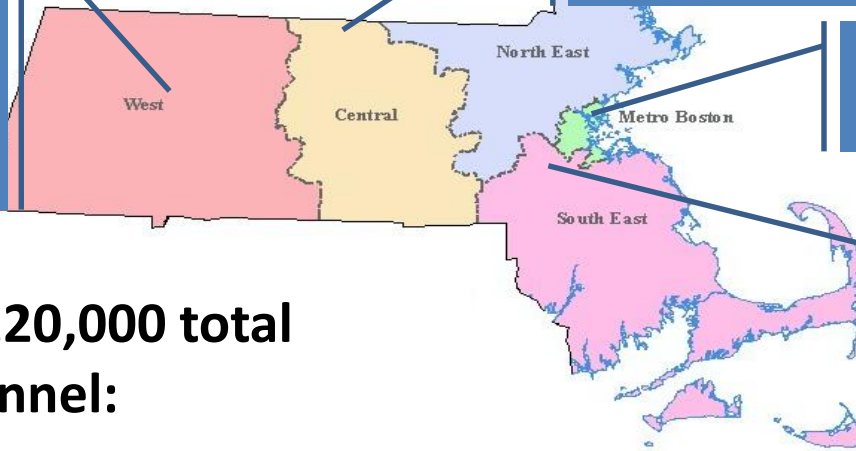
From 2008 SCIP, **120,000 total emergency personnel:**

- 40,000 police personnel

- 25,000 firefighters

- 15,000 EMTs

- 15,000 State Level Responders
(*MSP, Fire Services, MEMA, Mass Highway, National Guard, others*)

- 25,000 others
(*dispatchers, utility workers, support staff*)

Over **1,300 local and regional first responder agencies**:

- ~ 350 Police Departments

- ~ 360 Fire Departments

- ~ 330 EMS provider
(*private and public, including fire departments*)

- ~ 247 PSAPs

Massachusetts Overview
Major Infrastructure

Transportation Infrastructure

- 42 **airfields** *(public use)*
- 5,136 **bridges**
- 90 miles of **inland waterways**
- 11 **freight railroads** over 896 miles
- 36,177 miles of **highways** *(78% of Massachusetts highway miles are urban)*
- 5 **major tunnels** in downtown Boston
- 17.3 million **short tons of cargo** annually
- 408.3 million **unlinked passenger trips** via transit systems *(bus and rail)*
- **6th busiest US commuter rail system** *(131,000 daily weekday ridership)*
- 3.9 million **ferry passengers** annually *(MBTA and Steamship Authority)*
- 24 **ports**, including the **Port of Boston**
- 155 **harbors** under 65 **harbormasters**
- 1,519 miles of **coastline**
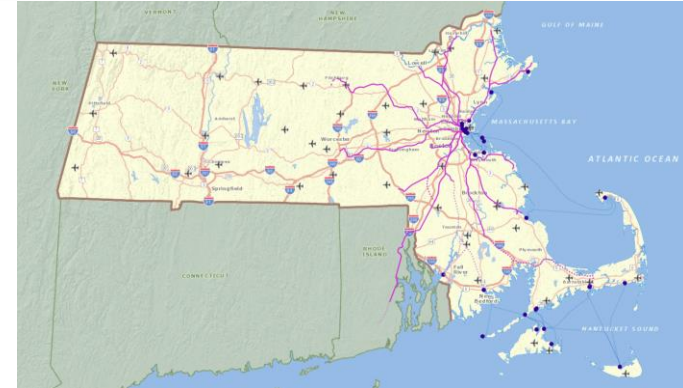
Energy

- 3 **liquefied natural gas** terminals *(1 active)*
- 1 of 2 Northeast **Home Heating Oil Reserves storage sites** (Revere)
- 124 **power plants**
- 1 **nuclear** generating station
- 1 federally approved **offshore wind project** *(Cape Wind)*

Public Infrastructure and Hazards

- 293 **high hazard dams**
- 30 sites on Nat. **Haz. Waste** Priorities List
- 69 miles of **levees**

Massachusetts Overview
Highlighted Major Events and Venues

Massachusetts is **host to hundreds of large events**, including venues for five professional sporting teams, collegiate activities, cultural and historical events, parades, races, and many other public gatherings.

Major Boston Events

- **Boston Harborfest** *(Boston and harbor towns; 200 activities; 2.5M attendees over 5 days)*

- **First Night** *(Boston and other locations; 250 exhibitions, 1M people in downtown)*

- **Rolling Rallies** *(Boston; short set-up time following major championship; 1M+)*

- **Boston Marathon** *(Hopkinton to Boston; 20,000+ participants, and approximately 1M spectators)*

- **Boston St. Patrick's Day Parade** *(South Boston; 850,000 spectators)*

- **4th of July, Boston Pops** *(Boston and Cambridge; 500,000 event viewers along banks of Charles)*

Across the State

- **The Big E, Eastern States Expo** *(W. Springfield; 6th-largest fair in US; 1.5M visitors over 17 days)*

- **Pan-Massachusetts Challenge** *(10 bike routes across 43 towns and cities)*

- **America's Hometown Thanksgiving** *(Plymouth; 250,000 visitors over 3 days)*

- **Gillette Stadium** *(Foxborough; 68,700 spectators)*

- **Topsfield Fair** *(Topsfield; 500,000 visitors in 11 days)*

- **Lowell Folk Fest** *(Lowell; 2nd largest free folk festival in US; 100,000 attendees over 3 days)*

- **xFinity Center** *(Mansfield; major open-air event venue; 19,900 capacity)*

Massachusetts Overview
Adjusting the OEC Baseline

There are several areas of the OEC Coverage baseline that will need to be adjusted for **Massachusetts-specific needs**.
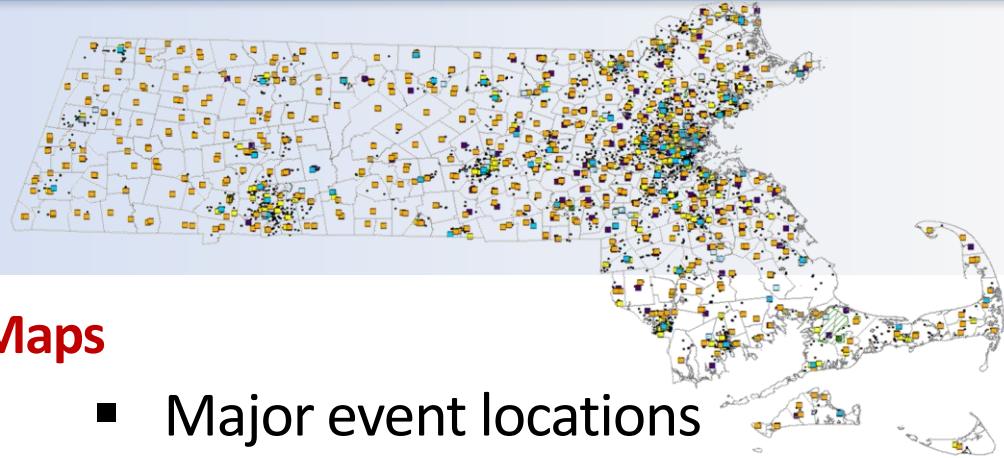
Potential Factors to Adjust Coverage Maps

- **User locations**
  - Fire stations
  - Police stations
  - EMS facilities
  - Acute care hospitals
  - PSAPs
  - Emergency Operations sites
  - Areas of frequent operation

- **Important facilities**
  - K-12 schools
  - Colleges and universities
  - Corrections/prisons
  - Court houses
  - Major state and municipal buildings

- **Major event locations**

- **Federal and tribal lands**

- **Infrastructure & transportation**
  - Airfields
  - Major bridges and tunnels
  - Rail and transit stations
  - Ferry terminals
  - Additional "major" roads
  - Power/utility stations
  - Seaports and harbors
  - Dams
  - Other critical infrastructure

- **Other criteria to be determined**

Massachusetts Assets
Broadband Assets

PSBO
Public Safety Broadband Office

Over the last decade, Massachusetts has significantly expanded broadband resources, especially in the area of **backhaul**.

Significant investment has been made in extending **broadband** to public safety agencies **in Western MA**

Two data centers support the bulk of state public safety information systems

A **fiber ring** connects the major agencies in the **Boston metro area**.

A **fiber backbone** connects data centers and agencies across the state

There are **few state owned tower assets** (most are leased or under agreement)

The OpenCape project has extended **broadband** to public safety **in the Cape**

MASSACHUSETTS EOPSS

Commonwealth of
Executive Office of Publi
Statewide Fiber Ass
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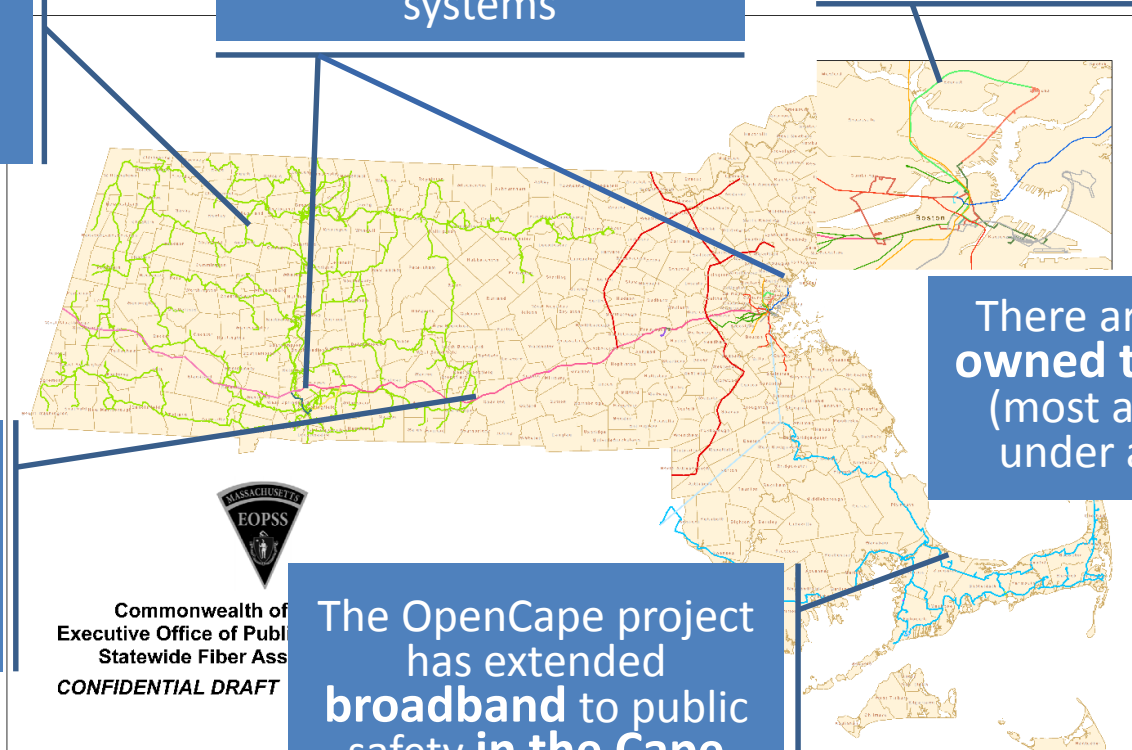
Massachusetts Assets
Digital Information Assets

Massachusetts public safety and first responders are relatively mature in the development and use of **digital assets that could be delivered on Band 14**.

- Computer Aided Dispatch
- Records Mgmt Systems
- CJIS, Criminal History, and RMV Queries
- Incident reporting
- BOLOs
- Missing Persons

- License plate readers
- Gun shot detectors
- Video feeds
- Mobile citation issuance
- Mobile crash reporting and crash site modeling
- Next Generation 911

FirstNet Takeaways

- **Municipal First Responders**
  - Most purchasers will be municipalities
  - Decisions about purchasing services will be made separately by each municipality
  - Many municipalities are cash strapped, with reported current issues funding AirCards

- **Radio Access Network**
  - Few state owned radio tower assets *(most are lease agreements)*
  - Array of local ordinances to be addressed when determining radio tower placement
  - Lease agreements will need to be negotiated with a variety of third-party tower owners
  - Many state tower assets are not of proper condition for FirstNet use *(e.g., aging water towers, wooden fire towers, etc.)*
  - Subject to a range of hazards that will require RAN hardening throughout the State
  - RAN placement will need to take into account coastal areas and island counties

- **Coverage Needs**
  - Elements of the OEC Baseline will need adjustment for Massachusetts
    - Missing first responder agencies
    - Missing substations
    - Expansion of major roads
  - Major event locations will likely require handheld coverage
  - Some events, like First Night, will increase coverage areas and capacity needs in multiple locations simultaneously

- **T-Band LMR**
  - The end of T-Band is a major concern for Massachusetts first responders